

Inventor(s): Therese Ouellet, et al. Application No.: 09/747,007 Docket Number: 411044.90030

#13

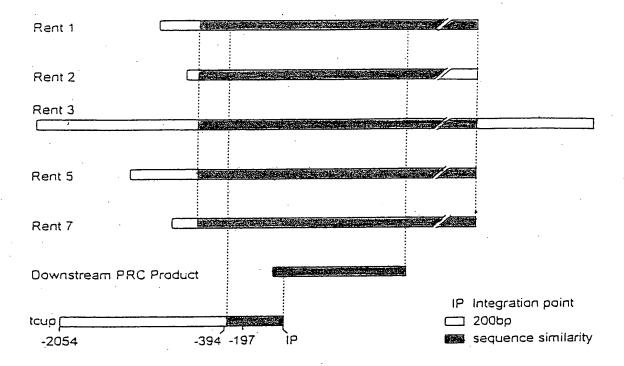


FIGURE 1A



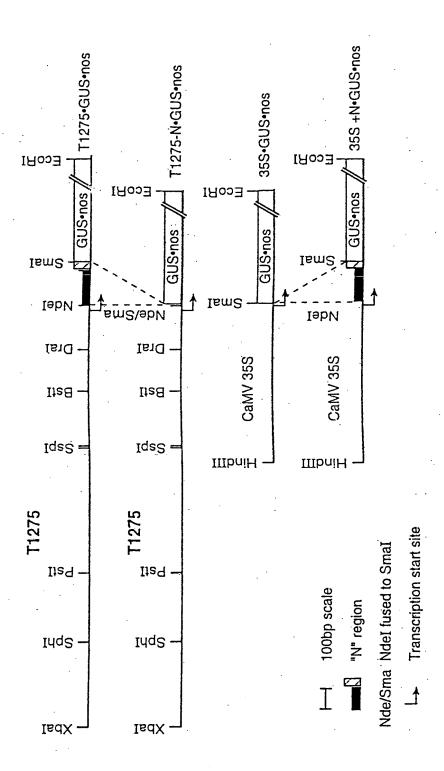


Figure 1B



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		10	20	30	40	50
tCUP	1					
Rent1.	1		A-		ATTGTAAGCG	GGATAACAAT
RENT2.	1		AT	GTTGTGTGGA	ATTGTGAGCG	GGATAACAAT
RENT3.	1	TT				
RENT5.	1			GGA	ATTGTGAGCG	G-ATAACAAT
RENT7.	1	TTTATGCTTC	CGGCTCGTAT	GTTGTGTGGA	ATTGTGAGCG	G-ATAACAAT
			20			
		60	70	80	90	100
tCUP	51					
100 Rentl.	51	TTCACACAGG	AAACAGCTAT	GACCATGATT	ACGCCAAGCT	TTTAATACGA
100 RENT2.	51	TTCACACAGG	AAACAGCTAT	GACCATGATT	ACGCCAAGCT	CT-AATACGA
100 RENT3.	51					
100 RENT5.	51	TTCACACAGG	AAACAGCTAT	' GACCATGATT	ACGCCAAGCT	CT-AATANGA
100 RENT7.	51	TTCACACAGG	AAACAGCTAT	GACCATGATT	ACGCCAAGCT	CT-AATACGA
100			·			
		110	120	) 130		
tCUP	101	L	TTF	A TAATTACAAA	ATTGALICIA	A GTATCTTTAA
150 RENT1.	101	L CTCACTATAG	GGAAAGCTT	A TAATTACAA	ATTGATTCT	A GTATTTTAA
150 RENT2.	10:	l CTCACTATAG	GGAAAGCTT	A TAATTACAA	A ATTGATTCT	A GTATTTTAA
150 RENT3.	10:	1			GATTCT	A GTTTTTTAA
150 RENT5.	10	1 CTCACTATAC	G GGAAAGCTT	A TAATTACAA	A TTTGATTCT	A GTATTTTAA
150 RENT7.	10	1 CTCACTATAC	G GGAAAGCTT	A TAATTACAA	A ATTGATTAT.	A GTACTTTTAA
150						



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t Circ			160	170	180	190	200
tCUP 200	=	151	TTTAATGCTT	T ATACATTAT	TTTAATTAA 1	A GTACTTTCA	TTTGTTTTCA
RENT1.		151	ጥጥጥ አ ጥ አ መመባ				
200	•		TITAATATT	TTACATTAT"	T AATTAATTT	A GAAGTTTTAA	TTTTTTTCA
RENT2.	1	151	TTTAATATTT	ATACATTATT	' ልልጥጥልል <i>ር</i> ጥጥአ		TTCGTTTTCA
200					· · · · · · · · · · · · · · · · · · · ·	GIACITICAA	TTCGTTTTCA
RENT3.	1	151	TTTAATATTT	ATACATTATT	AATTAATTTA	GTTCTTTCAA	TTTGTTTTCA
200 RENT5.							
200	1	151	TTTAATATTT	' ATACATTATI	' AATTAATTTA	GTACTTTCAA	TTTGTTTTCA
RENT7.		51	ጥጥጥ ል ል ጥጥጥ	* 7077 (77000 2000			
200	-		TITAATATIT	ATACATTATT	AATTAATTTA	GCACTTTCAA	TTTATTTTCA
			210	220		240	250
tcup	2	01	GAAATTATTT	TACTATTTT	TATAAAATAA	AAGGGAGAAA	ATGGCTATTT
250 RENT1.	•						
250	, 2	OT	GAAATCATTT	TACTATTTT	-ATAAAAACA	AAAGGGAAAA	GTGGTTATTT
RENT2.	. 2	0.7	<u> </u>	ጥን ሮጥን ጥጥጣጣ	######################################		
250	~	-	AMAITATTI	IACIAITIT	TGTAAAATAA	AAGGGAGAAA	ATGGCTATTT
RENT3.	2	01	GAAATTATTT	TACTATTTT	ΤΑΤΔΔΔΤΑΝ	AAGGGAGAAA	3.00.00 m 3.00m
250					THIMMIAA	AAGGGAGAAA	ATGGCTATTT
RENT5.	21	01	GAAATCATTT	TACTATGGTT	TATAAAATAA	AAGGGAGAAA	ATGGCTATTT
250							
RENT7. 250	20	01	GAAACCATTT	TACTATTTTT	TATAAAATAA	AAGGGACAAA	ATGGCTATTT
	-						
			260	270	280		
tCUP	25	51 2				290 GCTTAAAATC	300
300				,	TIGHTITIA	GCITAAAAIC	AG-CCCCAAT
RENT1.	25	51 2	AAATACTAGC	CCTATTTCAT	TTCAATTATA	GCCTAAAATC	AGCCCC-AAT
300							
RENT2.	25	51 2	AAATACTAGC	CCTATTTTAT	TTCAATTTTA	GCCTAAAATC	AGCCCCCAAT
RENT3.							
300	45	o'L A	AAATACCAGC	CCTATTTTAT	TTCAATTTTA	ACCTAAAATC	AGCCCC-AGT
RENT5.	25	51 Z	מתמתתמם מ		mma	<u>'</u>	
300			THINCINGC	CCIAITITAL	TTCAATTTTA	GCCTAAÁATC	AGCCCC-AAT
RENT7.	25	51 2	VAATACCAAC	ACTATTTTAT	ጥጥሮል ልጥጥጥል	GCCTAAAATC	777 <i>GGG</i> 775
300					CDAIIIIA	GCCTAAAATC	AAACCC-AAT



	PAC	
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CN	(in 1200)	8
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					•	
tCUP	3 (	31 ATAGCCCCA 10		33	0 340	350
350			- IICHMAIIC	A AATGGTCCA	G CCCAATTCC	350 AAA-TAACCC
RENT1. 350	3 (	1 TAACCCCAA	T TCCAAATTC	A AACGGGCCA	G CCCAATTCC1	T AAAATGACCC
RENT2. 350	. 30	01 TAACCCCAA	T TTCAAATTC	A AATGGGACA	G CCCAATTCCT	AAAATAACCC
RENT3. 350	30	)1 TAGCCCC		A AACGGCCCA	T CCCAATTCCT	' AAAATAACTC
RENT5. 350	30	1 TAACCCCTA	T TTCAAATTC	A AACGGGCTA	G CCCAGTTCCT	' AAAATAACCC
RENT7. 350	30	1 TAACCCC	;	A AACGGGCCA	G CCCAATTCCT	AAAACAACCC
tCUP ·		360	370	380	390	400
400	. 35	1 ACCCCTAACC	C C	GCCCGC	TTTCCCCTTT	TGATCCAGGC
RENT1.						
400	35	1 GCTCCTAACC	CGCTTTTCC	ACCCGCCCGC	TTTCCCCTTT	TGATCCAGGC
RENT2. 400	35	1 GCCCCTAACC	CTCTTATCCA	ACCCACCCGA	TTTCCCCTTT	TGATCCAGGT
RENT3.					TTCCC-CTTT	
400					11000-0111	TGATCCAGGC
RENT5. 400	351	L TCCCCTAACC	CGCTTATCCA	ACCCGCCCTG	TTTCCCCTTT	TGATCCAGGC
RENT7.						
400	351	l GCCCCTAACC	CGCTTATCCA	ACCCGCCCGA	TTTCCTCTTT	TGATCCAGGC
		410	420	430	440	
tCUP	401	CGTTGATCAT	TTTGATCAAC	GCCCAGAATT	TCCCCTTTTC	450
450				CCCCAGAATT	recectifie	C'I'I'TTTAAT
RENT1.	401	TGTTGATCAT	TTTGATCAAC	GGCCAGAATT	TCCCCTTTCC	
450			-		recectifie	ITTTTAAT
RENT2.	401	TGTTGATCAT	TTTGATCAAC	GACCAGAATT	TCCCCCTTCC	ጥር ጥጥጥጥጥ አ ጥ
450		•	-			
RENT3. 450	401	CGTTGATCAT	TTTGATCAAC	GACCAGAATT	TCCCCTTTCC	-TTTTTTAAT
RENT5.		4			<u>,*</u> *	
450	401	CGTTGATCAT	TTTGATCAAC	GACCAAAATT	TCCCCTTT-C	CTTTTTTAAT
RENT7.						
450	*01	CGIIGAICAT	TTTGATCAAC	GGCCAGAATT	TCCCCTTTCC -	TTTTTTCAT



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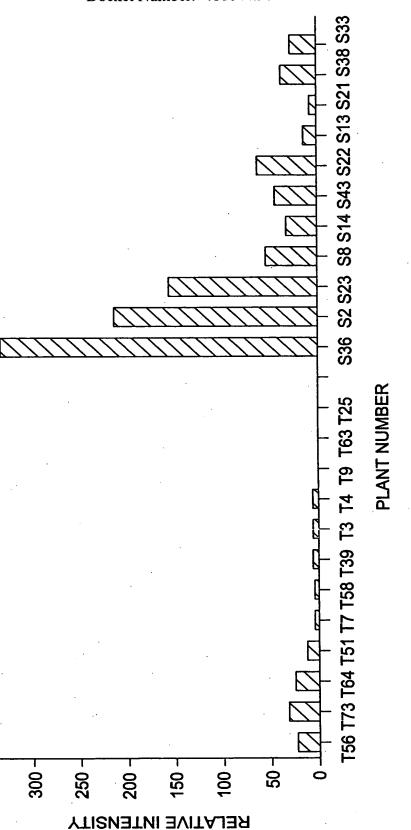
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		460	450			
tCUP	451		470	480	490	500
500	42T	TCCCAAACAC	C-CCTAACTC	TATCCCATTT	CTCACCAACC	GCCACATATG
RENT1.	451	macann na a	222222			
500	451	TCCCAAACAC	CCCCCAACCT	TATCCCGTTT	CTCACCAACC	GCCAGATCT-
RENT2.	451	maaaaaaaa				
500	451	TCCCAAACAC	CCCCCAACCC	TATCCCATTT	CTCACCAACC	GCCAGATCT-
	4==					
RENT3.	451	TCCCAAACAC	CGCC-AAACC	TATCCCATTT	CTCACCAACC	GCCAGATCTA
500 RENT5.	4 = 3	maaa				
500	451	TCCCAAACAC	CCCC-AACCC	TATCCCATTT	CTCACCAACC	GCCAGATCT-
RENT7.	453	<b>E</b>	~~~~			
500	451	TCCCAAACAC	CCCC-AAACC	TATCCCATTT	CTCACCAACC	GCCAGATCTA
500						
	•					
tCUP	F.0.7	510	520	530	540	550
. 550	. 501	AATCCTCTTA	TCTCTCAAAC	TCTCTCGAAC	CTTCCCCTAA	CCCTAGCAGC
	501	3 MG GM GM T				
RENT1. 550	501	-ATCCTCTTA	TCTCTCAAAC	TCTCTCGAAC	CTTCCCCTAA	CCCTAGCAGC
RENT2.		3.55.55.55.5		•		
550	501	-ATCCTCTTA	TCTCTCAAAC	TCTCTCGAAC	CTTCCCCTAA	CCCTAGCAGC
RENT3.	F07					
550	501	TCCTCTTA	TCTCTCAAAC	TCTCTCGAAC	CTTCCCCTAA	CCCTAGCAGC
RENT5.	507	3.55.55.55.55				•
550	501	-ATCCTCTTA	TCTCTCAAAC	TCTCTCGAAC	CTTCCCCTAA	CCCTAGCAGC
RENT7.	F01	m comomma	mamaman an a			
550	501	TCCTCTTA	TCTCTCAAAC	TCTCTCGAAC	CTTCCCCTAA	CCCTAGCAGC
. 550						
•						
		5.60				
tCUP	551	560	570	580	590	600
600	221	CICICATCAT	CCTCACCTCA	AAACCCACCG	GAATACATGG	CTTCTCAAGC
RENT1.	5.51	CHICHCA HOA H	CCMCD CCMCD			
600	221	CICICATCAT	CCTCACCTCA	AAACCCACCG	GCCACCATGG	CCTCTAGAG-
RENT2.	E C 1	CTCTC ATC ATC	CCMCR CCMCR			
600	221	CICICATCAT	CCTCACCTCA	AAACCCACCG	GCCACCATGG	CCTCTAGAG-
RENT3.	era.		COMO A COMO S	777000700	000100	
600	527	CICICATCAT	CCTCACCTCA	AAACCCACCG	GCCACCATGG	CCTCTAGAGG
RENT5.		CTCTCT TCT TCT TCT	CCMCA CCMC	111000100	9	
600	221	CICICATCAT	CCTCACCTCA	AAACCCACCG	GCCACCATGG	CCTCTAGAG-
RENT7.	553	amaman man m	COMOR COMOS			
600	221	CICICATCAT	CCTCACCTCA	AAACCCACCG	GCCACCATGG	CCTCTAGAGG
600						



		610	620	630	640	650
<b>LCUP</b>	601	CGTGGAAACC	TTATACTCAC	CTCCCTTTGC	TCTTACAGTA	CTC-GGCCGT
650						
RENT1.	601	GATCCCC	GGGTGGTCAG	TCCCTTATG-	TTAC	GT
650						•
RENT2.	601	GA		-TCCCCG	GGTG	GTC-AGTCCC
650					•	
RENT3.	601	ATCCCC	GGGTGGTCAG	TCCCTTATGT	NACG	NCCTAAATGN
<sub>.</sub> 650		•				
RENT5.	601	GATCCCC	GGGTGGTCAG	TCCCTTATG-	TTACG	
650					•	
RENT7.	601	ATCCCC	GGGTGGTCAG	TCCCTTATGT	TACG	TCCTN
650						
•						
•					•	
•				680		
tCUP	651	660 CGACCGCGGT				
700		CGACCGCGGT	ACCCGGG			
700 RENT1.			ACCCGGG			
700 RENT1. 700	651	CGACCGCGGT	ACCCGGG			
700 RENT1. 700 RENT2.	651	CGACCGCGGT	ACCCGGG			
700 RENT1. 700 RENT2. 700	651 651	CGACCGCGGT  C  TTAT-GTG	ACCCGGG			
700 RENT1. 700 RENT2. 700 RENT3.	651 651	CGACCGCGGT	ACCCGGG			
700 RENT1. 700 RENT2. 700 RENT3.	651 651	CGACCGCGGT  C  TTAT-GTG  CCGNCCTGNN	ACCCGGGCTNAACGTC NNNNN-C			
700 RENT1. 700 RENT2. 700 RENT3.	651 651	CGACCGCGGT  C  TTAT-GTG	ACCCGGGCTNAACGTC NNNNN-C			
700 RENT1. 700 RENT2. 700 RENT3. 700 RENT5.	651 651	CGACCGCGGT  C  TTAT-GTG  CCGNCCTGNN	ACCCGGGCTNAACGTC NNNNN-C			
700 RENT1. 700 RENT2. 700 RENT3. 700 RENT5.	651 651 651	CGACCGCGGT  C  TTAT-GTG  CCGNCCTGNN	ACCCGGGCTNAACGTC NNNNN-C			

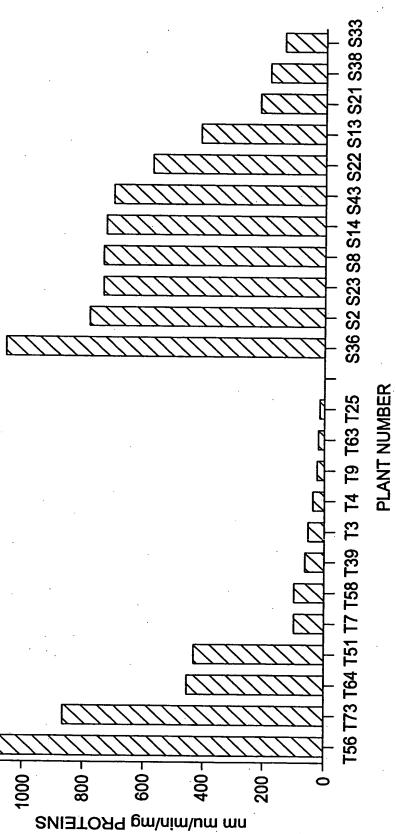






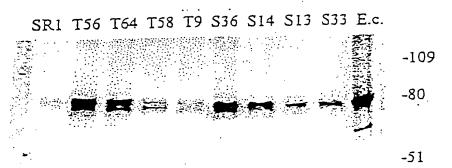
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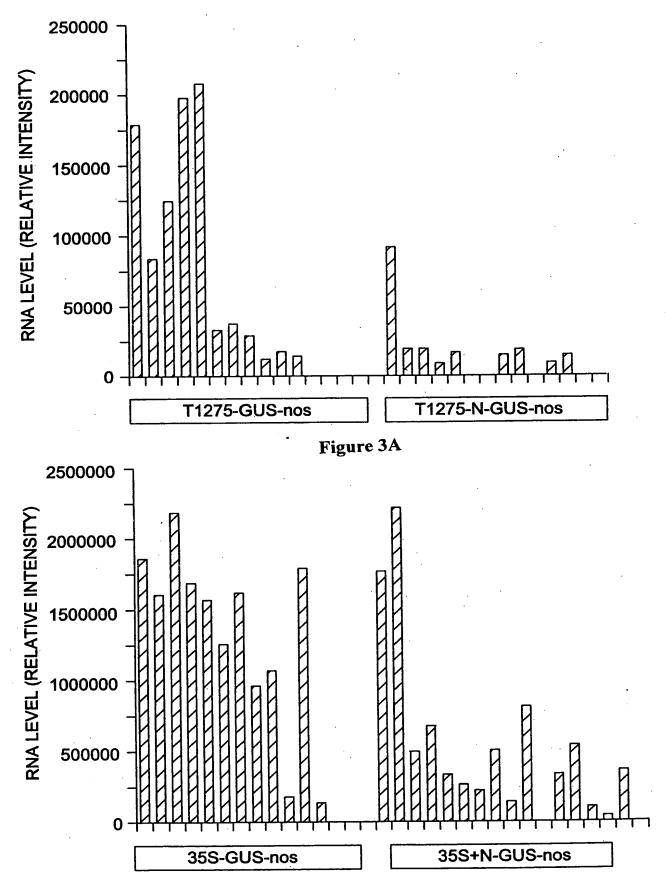
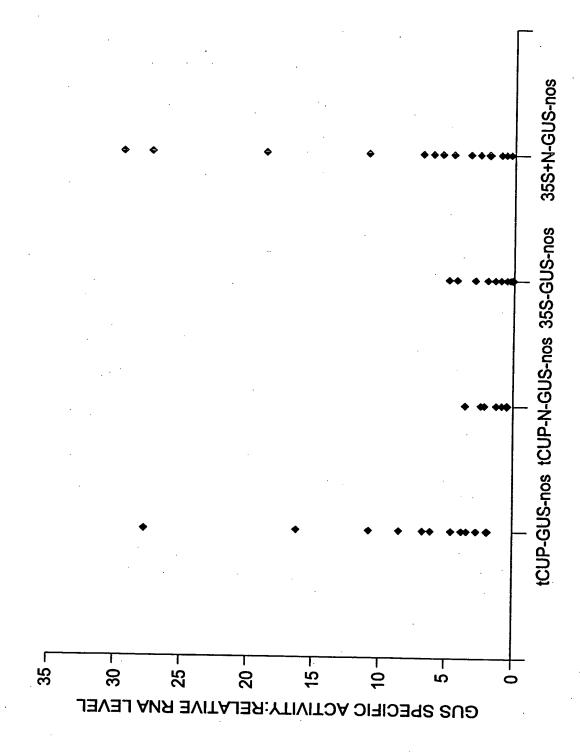


Figure 3B



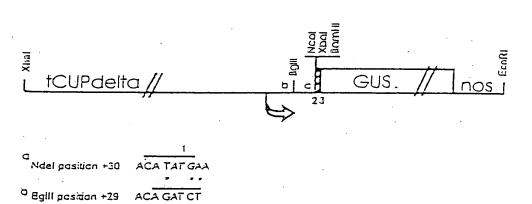




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## FIGURE 4A



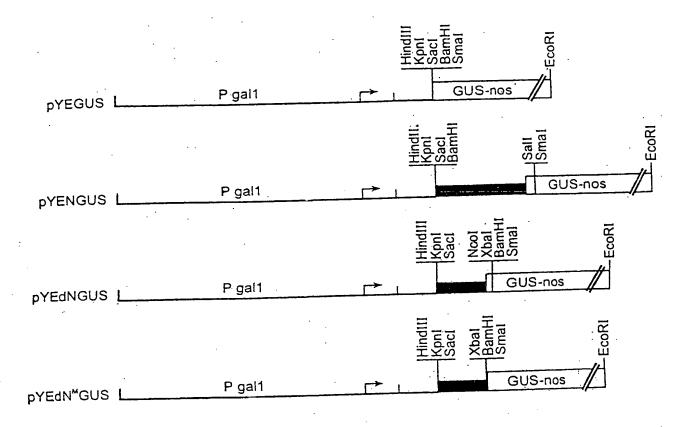
Neal position 0 CC ACC ATG GCC TCT AGA GGA TCC CCG GGT GGT CAG TCC CTT ATG

tCUP initiation site GAA TAC ATG G /... tCUP leader ... / CCG GGT GGT CAG TCC CTT ATG

Kazak consensus CC ACC ATG G .



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Vector sequence

N,dN, or dN<sup>M</sup>

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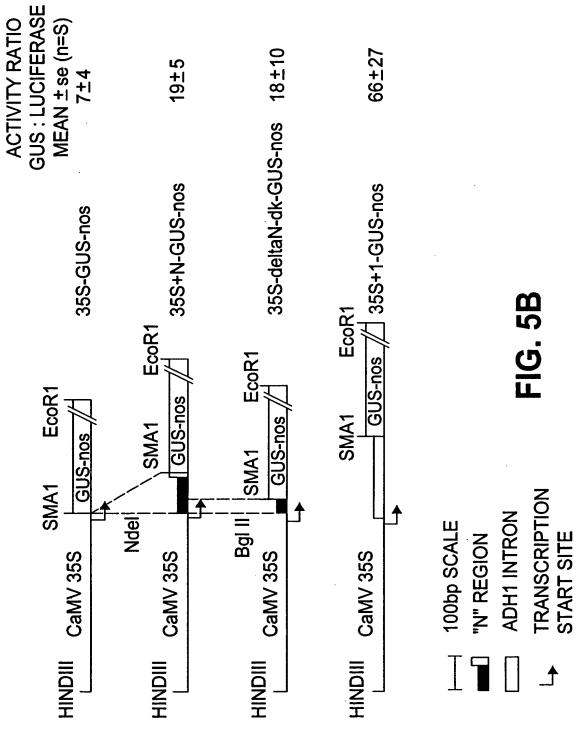
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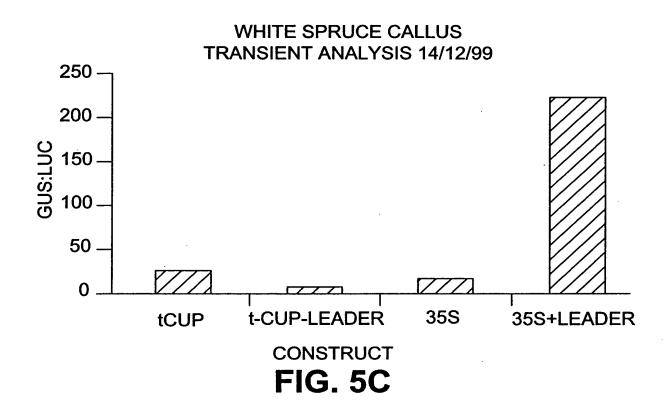


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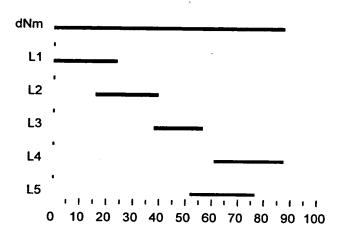


Figure 6A

Linker 1: GGATCTATCCTCTAA

Linker 2: ATCTCTCAAACTCTCTCGAACCTT

Linker 3: TTCCCCTAACCCTAGCAG

Linker 4: ATCATCCTCACCTCAAAACCCACC

Linker 5: AGCCTCTCATCATCCTCACCTCAA

Figure 6B



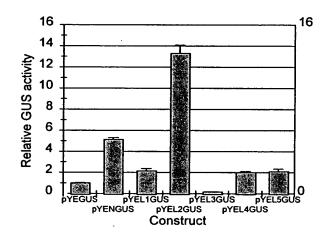
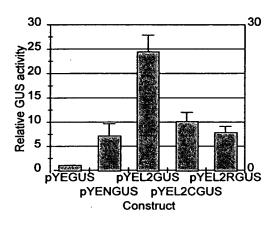


Figure 6C

L2	AUCUCUCAA <b>ACUCUCU</b> CGAACCUU						
L2C	AUCUCUCAAACUCUCU						
L2R	ACUCUCUCGAACCUU						

Figure 6D





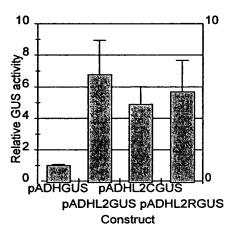


Figure 6E

L2	Α	TCT	CTC	AAA	CTC	TCT	CGA	ACC	TT
SCAN1	a	AGA	ctc	aaa	ctc	tct	cga	acc	tt
SCAN2	a	tct	GAG	aaa	ctc	tct	cga	acc	tt
SCAN3	a	tct	ctc	GGG	ctc	tct	cga	acc	tt
SCAN4	а	tct	ctc	aaa	GAG	tct	cga	acc	tt
SCAN5	а	tct	ctc	aaa	ctc	AGA	cga	acc	tt
SCAN6	а	tct	ctc	aaa	ctc	tct	GCT	acc	tt
SCAN7	а	tct	ctc	aaa	ctc	tct	cga	GAG	tt

Figure 6F



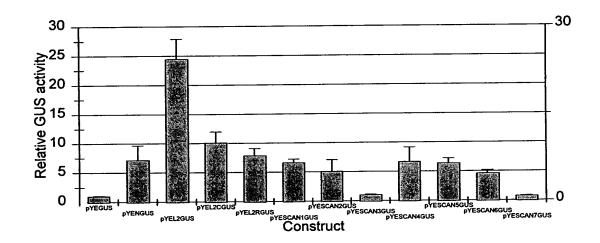


Figure 6G



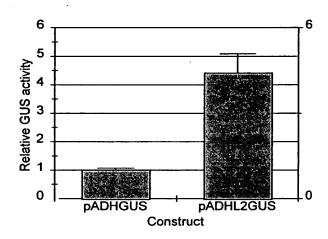
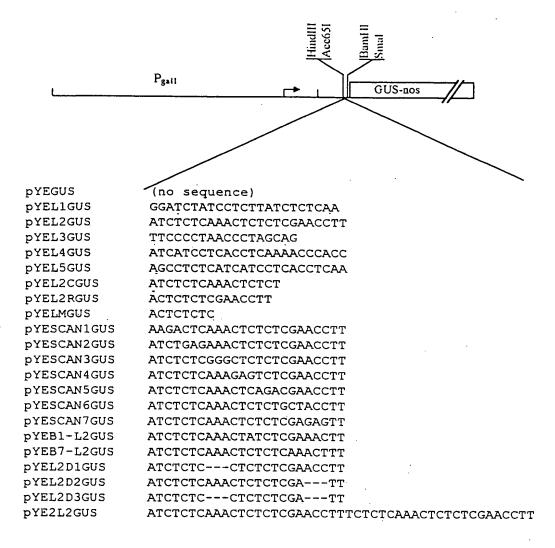


Figure 6H



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#### LEGEND:

Vector sequence

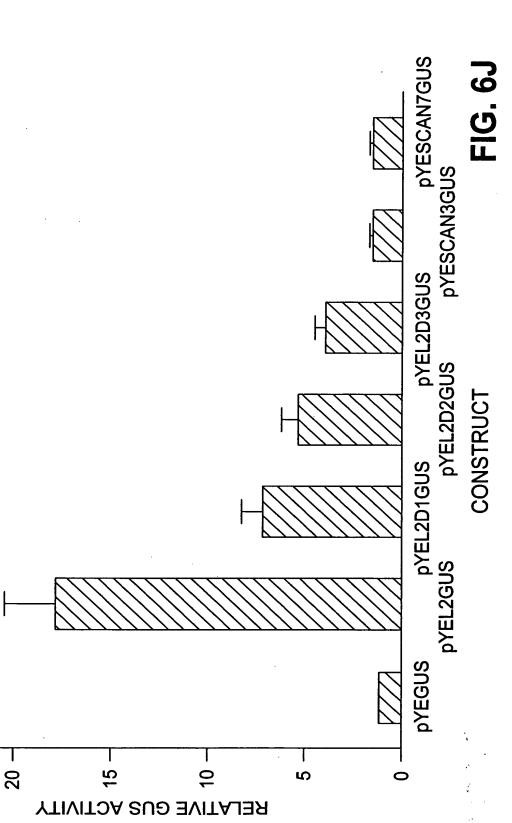
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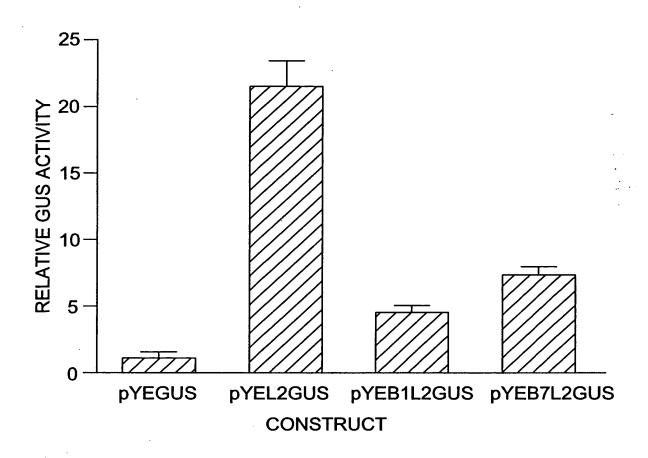
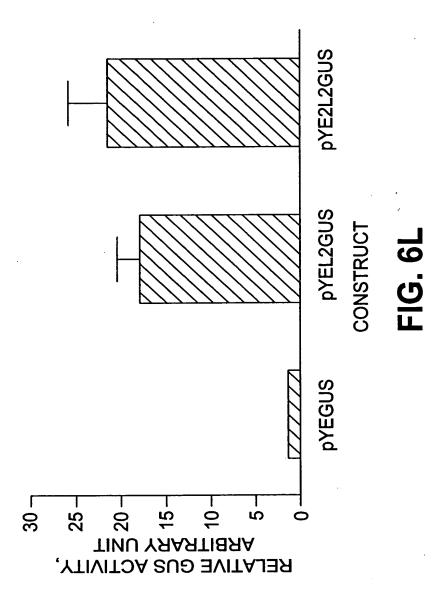


FIG. 6K







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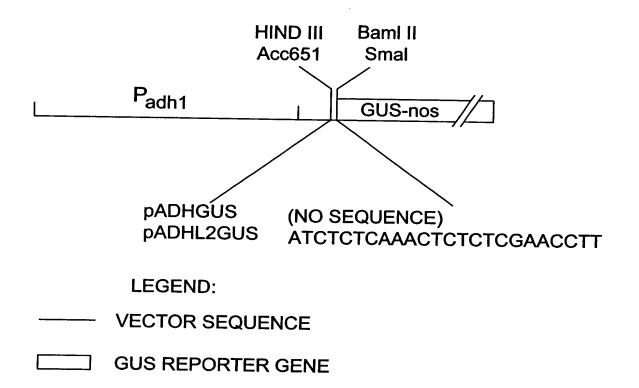
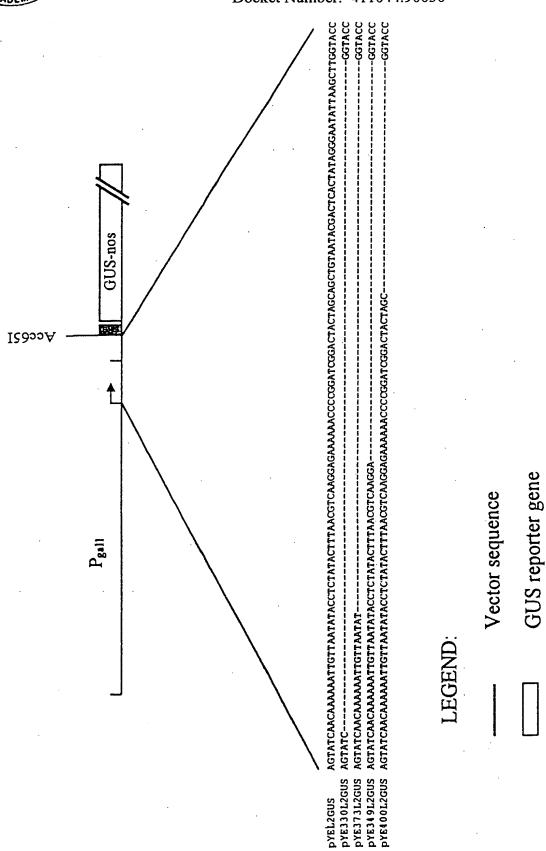


FIG. 6M

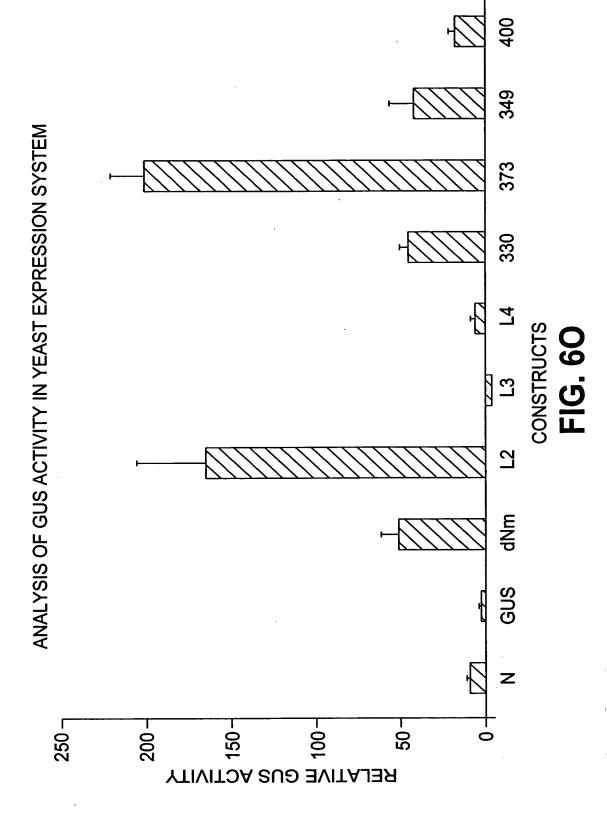


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pYEGUS				Ngr-
pYEL2GUS	8			



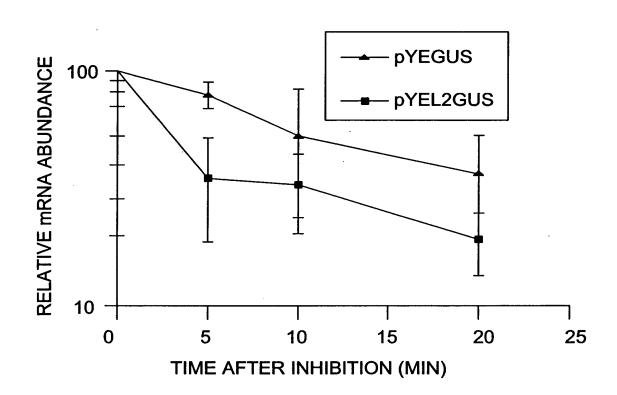


FIG. 6P.2



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**ENHANCED tCUP VERSIONS 1-3** 

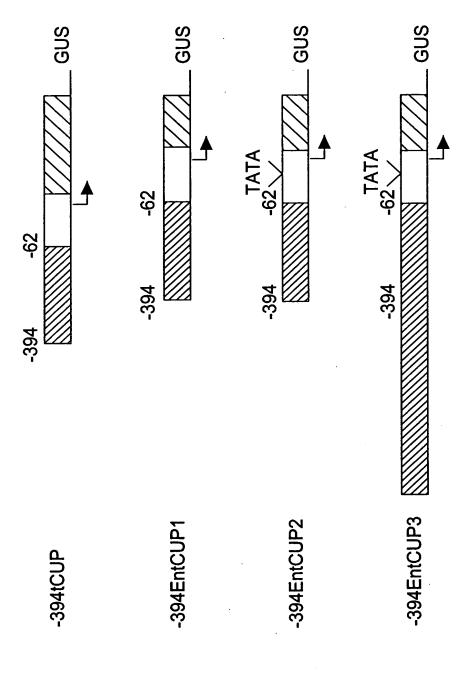
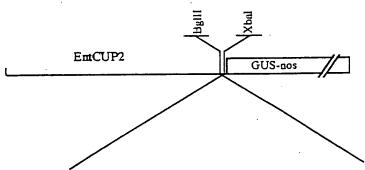


FIG. 7A.1

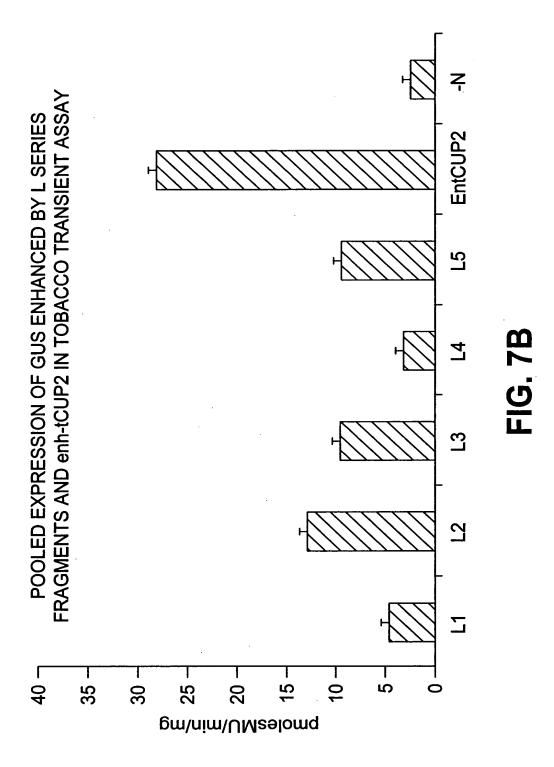


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PUCTCUP2L2GUS
PUCTCUP2L3GUS
PUCTCUP2L4GUS
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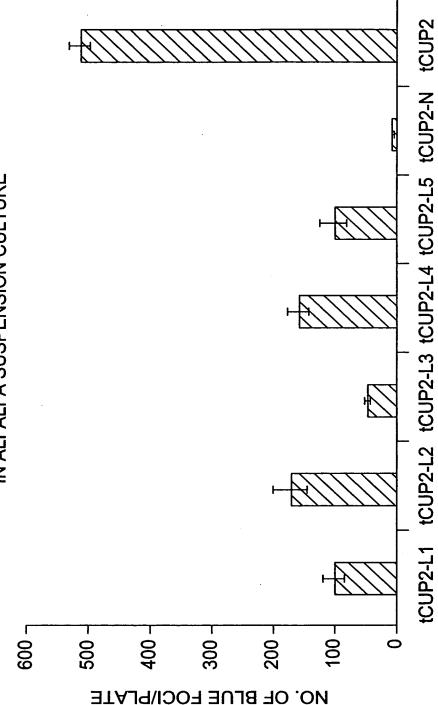


FIG. 7C



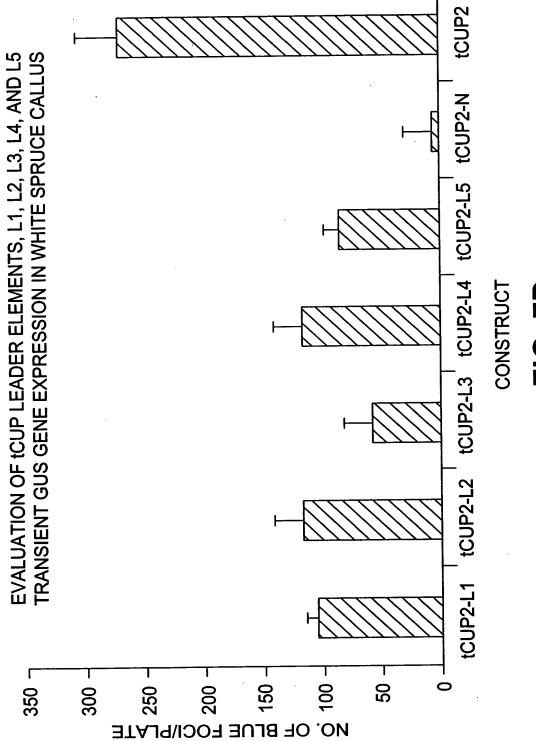
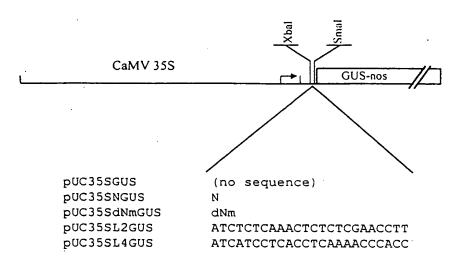


FIG. 7D



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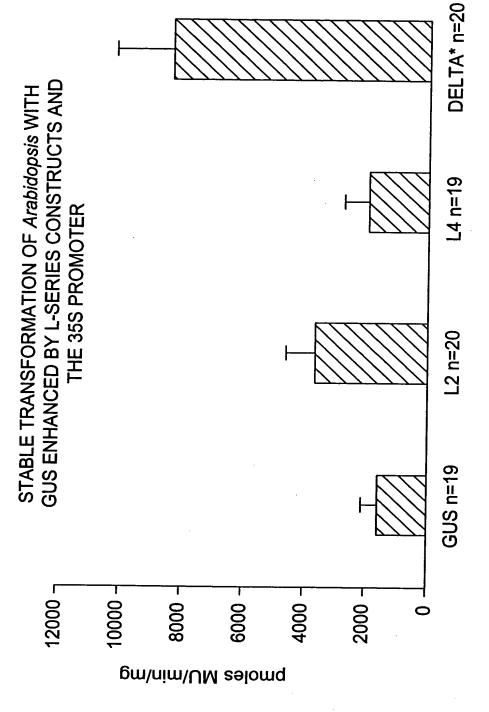


FIG. 8B



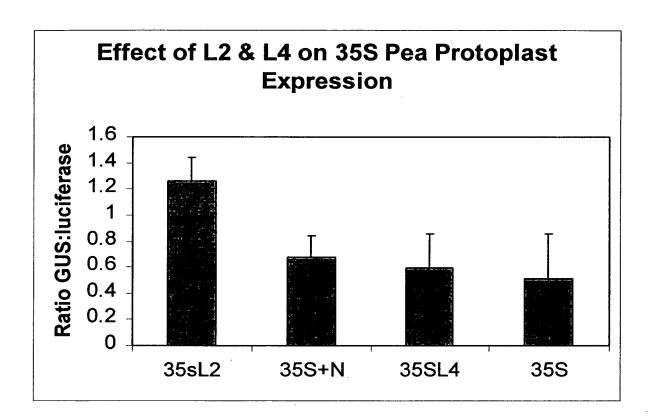


Figure 8C



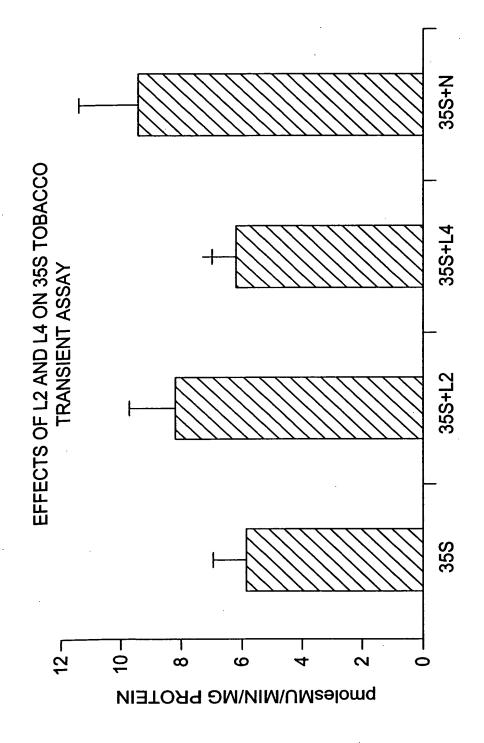
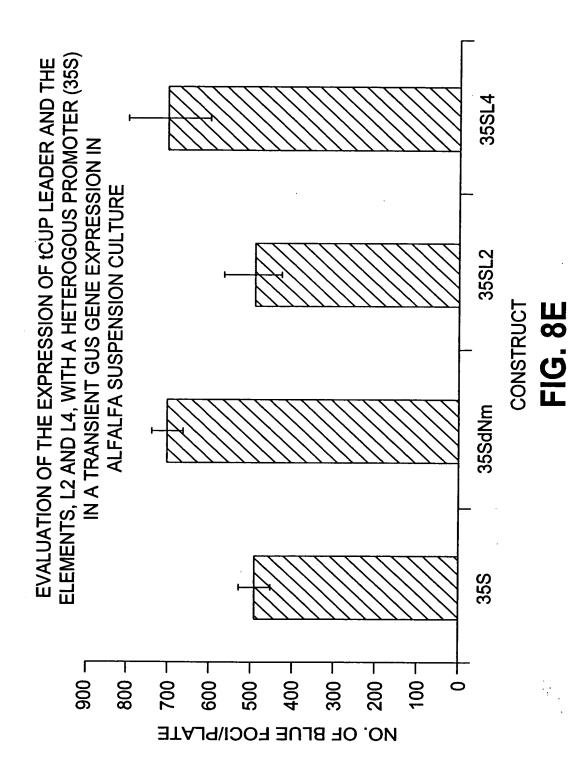
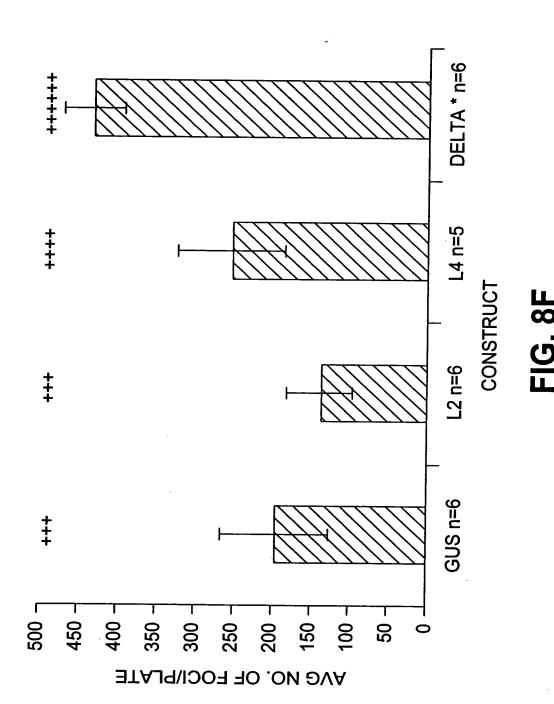


FIG. 8D

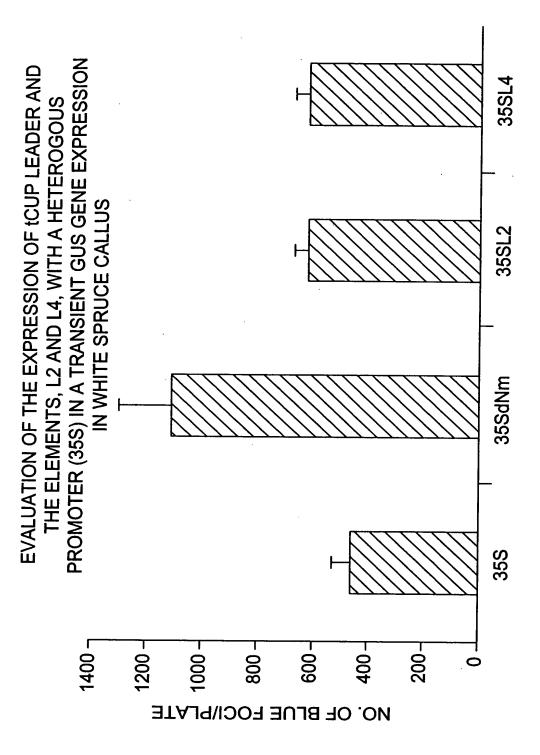








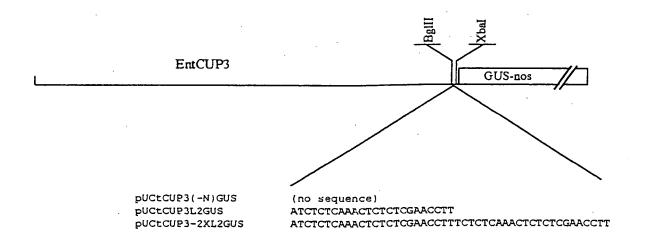
Title: TRANSLATIONAL REGULATORY ELEMENTS



CONSTRUCT FIG. 8G



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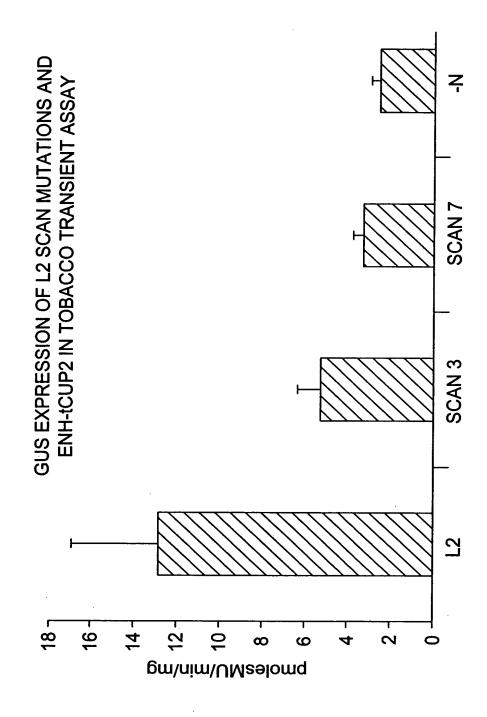


## LEGEND:

Vector sequence

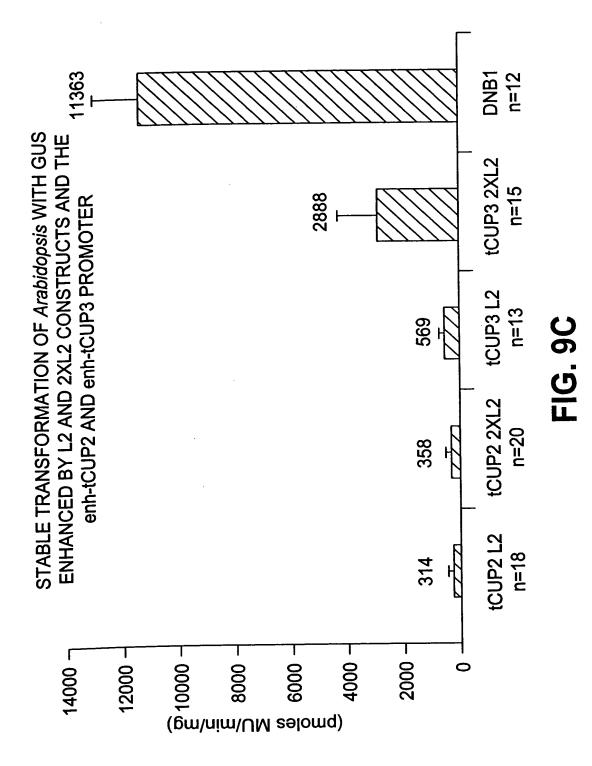
GUS reporter gene





**-1G.** 9B







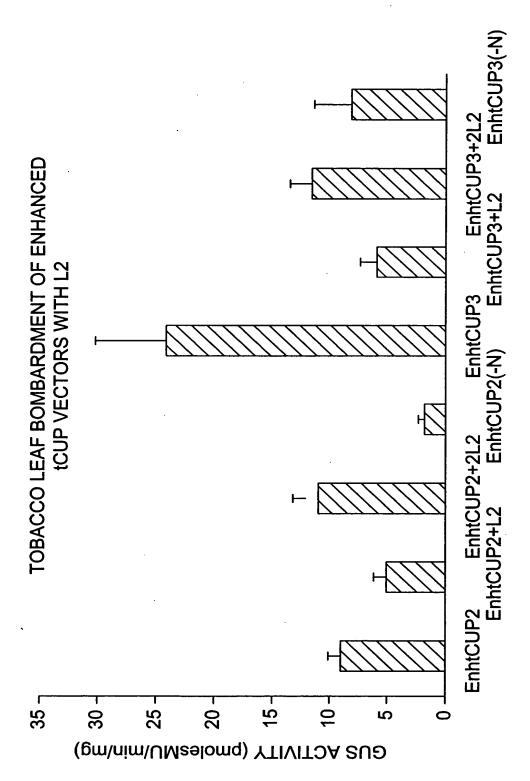


FIG. 9D



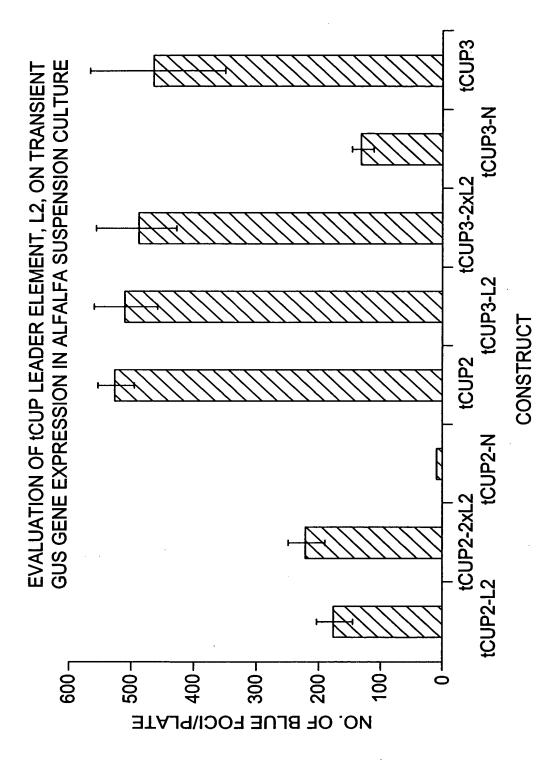


FIG. 9E



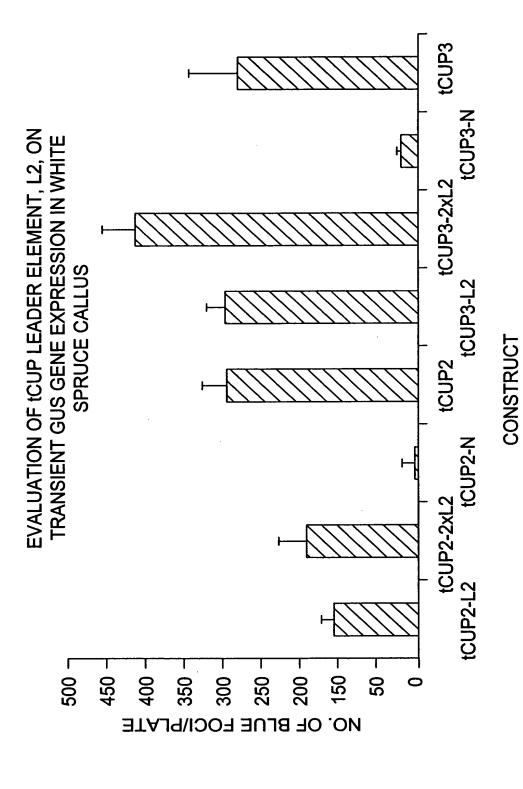
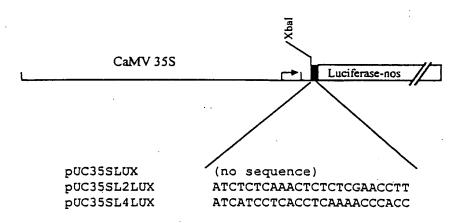


FIG. 9F



Inventor(s): Therese Ouellet, et al. Application No.: 09/747,007 Docket Number: 411044.90030



## LEGEND:

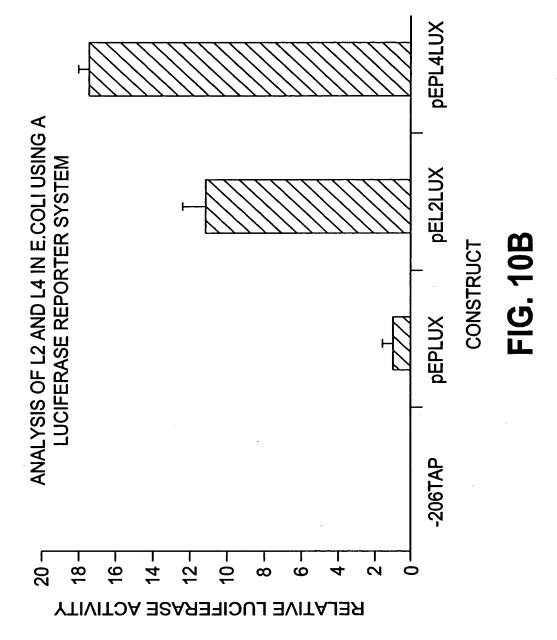
Vector sequence

Luciferase reporter gene

L2 or L4

➤ Start of transcription







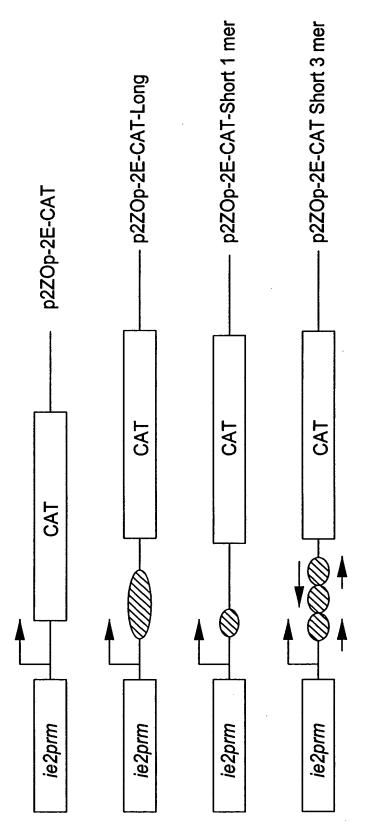


FIG. 11A



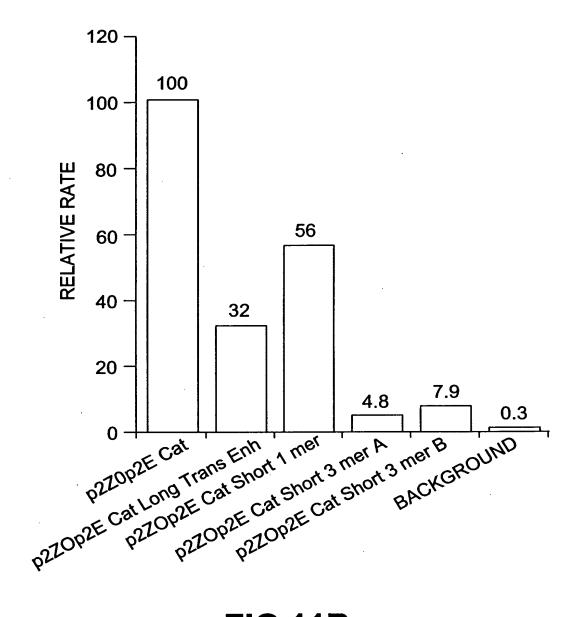


FIG.11B